

Table 1. Observer coverage of primary tier-limit sablefish catch landed by sablefish-endorsed fixed-gear vessels during 2001-2004 by port group and gear group as recorded by fish tickets.

Year	Port Group	Hook & Line					Pot				
		Not observed		Observed		Total	Not observed		Observed		Total
		mt	Percent of unobserved mt by port group	mt	Percent of observed mt by port group	mt	mt	Percent of unobserved mt by port group	mt	Percent of observed mt by port group	mt
2001											
	Puget Sound	221	86%	35	14%	256	0		0		0
	Neah Bay	111	100%	0	0%	111	0		0		0
	Astoria	238	98%	5	2%	244	86	77%	26	23%	112
	Newport	91	64%	51	36%	142	206	97%	5	3%	212
	Coos Bay	63	100%	0	0%	63	164	100%	0	0%	164
	Crecent City	119	100%	0	0%	119	51	100%	0	0%	51
	Eureka	43	100%	0	0%	43	0		0		0
	Fort Bragg	78	100%	0	0%	78	0		0		0
	San Francisco	74	100%	0	0%	74	0		0		0
	Monterey	50	100%	0	0%	50	0		0		0
	ALL PORTS	1,087	92%	91	8%	1,178	508	94%	31	6%	539
2002											
	Puget Sound	171	67%	84	33%	233	0		0		0
	Neah Bay	69	92%	6	8%	75	0		0		0
	Astoria	125	82%	27	18%	152	66	78%	18	22%	84
	Newport	66	95%	3	5%	69	108	91%	10	9%	118
	Coos Bay	20	43%	26	57%	46	79	68%	37	32%	116
	Crecent City	36	56%	28	44%	64	29	58%	21	42%	49
	Eureka	45	86%	7	14%	52	0		0		0
	Fort Bragg	19	71%	7	29%	26	8	100%	0	0%	8
	San Francisco	26	100%	0	0%	26	0		0		0
	Monterey	25	100%	0	0%	25	5	100%	0	0%	5
	ALL PORTS	600	75%	188	25%	767	294	77%	86	23%	381
2003											
	Puget Sound	154	63%	92	33%	223	10	100%	0	0%	10
	Neah Bay	88	100%	0	0%	88	0	0%	13	100%	13
	Astoria	106	79%	28	21%	133	105	65%	56	35%	162
	Newport	131	75%	44	25%	175	37	24%	120	76%	157
	Coos Bay	51	100%	0	0%	51	129	93%	9	7%	139
	Crecent City	76	95%	4	5%	80	21	100%	0	0%	21
	Eureka	15	100%	0	0%	15	0		0		0
	Fort Bragg	23	58%	17	42%	40	11	100%	0	0%	11
	San Francisco	14	100%	0	0%	14	0		0		0
	Monterey	19	100%	0	0%	19	7	100%	0	0%	7
	ALL PORTS	677	79%	184	21%	861	321	62%	198	38%	519
2004											
	Puget Sound	350	91%	36	9%	386	0		0		0
	Neah Bay	154	90%	18	10%	172	2	100%	0	0%	2
	Astoria	196	78%	56	22%	252	115	95%	7	5%	121
	Newport	166	85%	29	15%	195	250	87%	38	13%	288
	Coos Bay	53	77%	16	23%	69	101	100%	0	0%	101
	Crecent City	95	100%	0	0%	95	49	100%	0	0%	49
	Eureka	35	92%	3	8%	38	0		0		0
	Fort Bragg	60	99%	1	1%	61	0	0%	46	100%	46
	San Francisco	31	100%	0	0%	31	0		0		0
	Monterey	31	77%	9	23%	41	7	93%	0	7%	8
	ALL PORTS	1,170	87%	169	13%	1,339	523	85%	91	15%	614

Table 2. Observer coverage of groundfish catch (excluding skates and sharks) landed by sablefish-endorsed fixed-gear vessels during 2001-2004 by port group and gear group as recorded by fish tickets.

		Hook & Line					Pot				
		Not observed		Observed		Total	Not observed		Observed		Total
			Percent of unobserved mt by port group		Percent of unobserved mt by port group			Percent of unobserved mt by port group		Percent of unobserved mt by port group	
Year	Port Group	mt		mt		mt	mt		mt		mt
2001											
	Puget Sound	230	86%	37	14%	254	0		0		0
	Neah Bay	119	100%	0	0%	119	0		0		0
	Astoria	249	98%	6	2%	254	89	78%	26	22%	114
	Newport	93	64%	52	36%	145	208	97%	5	3%	214
	Coos Bay	65	100%	0	0%	65	164	100%	0	0%	164
	Crecent City	123	100%	0	0%	123	51	100%	0	0%	51
	Eureka	45	100%	0	0%	45	0		0		0
	Fort Bragg	88	100%	0	0%	88	0		0		0
	San Francisco	82	100%	0	0%	82	0		0		0
	Monterey	58	100%	0	0%	58	0		0		0
	ALL PORTS	1,154	92%	94	8%	1,248	512	94%	31	6%	543
2002											
	Puget Sound	183	67%	89	33%	272	0		0		0
	Neah Bay	77	92%	6	8%	83	0		0		0
	Astoria	132	82%	28	18%	161	67	78%	19	22%	86
	Newport	71	95%	3	5%	74	108	91%	10	9%	119
	Coos Bay	20	43%	26	57%	46	80	68%	37	32%	116
	Crecent City	38	57%	29	43%	67	29	58%	21	42%	50
	Eureka	52	86%	8	14%	60	0		0		0
	Fort Bragg	21	73%	8	27%	29	8	100%	0	0%	8
	San Francisco	30	100%	0	0%	30	0		0		0
	Monterey	34	100%	0	0%	34	6	100%	0	0%	6
	ALL PORTS	658	77%	199	23%	857	297	77%	87	23%	384
2003											
	Puget Sound	164	62%	99	38%	263	10	100%	0	0%	10
	Neah Bay	92	100%	0	0%	92	0	0%	13	100%	13
	Astoria	110	79%	29	21%	140	108	66%	57	34%	166
	Newport	134	75%	44	23%	178	38	24%	121	76%	158
	Coos Bay	51	100%	0	0%	51	129	93%	9	7%	139
	Crecent City	78	95%	4	5%	83	21	100%	0	0%	21
	Eureka	16	100%	0	0%	16	0		0		0
	Fort Bragg	24	56%	20	44%	44	11	100%	0	0%	11
	San Francisco	16	100%	0	0%	16	0		0		0
	Monterey	33	100%	0	0%	33	7	100%	0	0%	7
	ALL PORTS	719	81%	196	19%	915	325	62%	201	38%	525
2004											
	Puget Sound	368	91%	38	9%	406	0		0		0
	Neah Bay	166	89%	21	11%	187	2	100%	0	0%	2
	Astoria	205	78%	57	22%	262	117	95%	7	5%	124
	Newport	168	85%	29	15%	197	253	87%	39	13%	291
	Coos Bay	53	77%	16	23%	70	101	100%	0	0%	101
	Crecent City	97	100%	0	0%	97	49	100%	0	0%	49
	Eureka	36	92%	3	8%	39	0		0		0
	Fort Bragg	64	99%	1	1%	65	0	0%	47	100%	47
	San Francisco	35	100%	0	0%	35	0		0		0
	Monterey	43	81%	10	19%	53	7	93%	0	7%	8
	ALL PORTS	1,212	88%	165	12%	1,411	529	85%	93	15%	622

Table 3. Number of observed limited entry, fixed-gear primary sablefish endorsed trips by port group and gear.

Port Group	Hook & Line		Pot		All Gears	
	Number of trips	Percent of trips in port group	Number of trips	Percent of trips in port group	Number of trips	Percent of trips in port group
Puget Sound	5	12%	0	0%	5	9%
Neah Bay	7	16%	0	0%	7	13%
Astoria	8	19%	2	17%	10	18%
Newport	7	16%	3	25%	10	18%
Coos Bay	6	14%	0	0%	6	11%
Eureka	2	5%	0	0%	2	4%
Fort Bragg	1	2%	6	50%	7	13%
Monterey	7	16%	1	8%	8	15%
ALL PORTS	43	100%	12	100%	55	100%

Table 4. Number of observed limited entry, fixed-gear primary sablefish endorsed sets by depth strata and gear. The depths used to partition sets into deep and shallow strata were 100fm north of 40° 10' N lat. And 150fm south of 40° 10' N. lat.

Depth	Hook & Line		Pot		All gears	
	Number of sets	Percent of sets in depth strata	Number of sets	Percent of sets in depth strata	Number of sets	Percent of sets in depth strata
Deep	309	99%	133	100%	442	100%
Shallow	2	1%	0	0%	2	0%
All Depths	311	100%	133	100%	444	100%

Table 5. Discard rates for species taken from observed limited entry, fixed gear primary sablefish fishery by gear.

	Hook & Line		Pot	
	Pounds of species	Percent	Pounds of species	Percent
Bocaccio Rockfish				
Discarded	13	100%		
Retained	0	0%		
Total Catch	13	100%		
Canary Rockfish				
Discarded	1,580	99%		
Retained	15	1%		
Total Catch	1,595	100%		
Widow Rockfish				
Discarded	0	0%	0	0%
Retained	5	100%	3	100%
Total Catch	5	100%	3	100%
Yelloweye Rockfish				
Discarded	311	94%		
Retained	20	6%		
Total Catch	331	100%		
Darkblotched Rockfish				
Discarded	80	53%	16	19%
Retained	70	47%	66	81%
Total Catch	150	100%	82	100%
Pacific Ocean Perch				
Discarded	6	20%	3	44%
Retained	24	80%	4	56%
Total Catch	30	100%	7	100%
Lingcod				
Discarded	1,234	56%	516	30%
Retained	978	44%	1,233	70%
Total Catch	2,212	100%	1,749	100%
Dover sole				
Discarded	218	31%	40	29%
Retained	487	69%	99	71%
Total Catch	705	100%	138	100%
Longspine thornyhead				
Discarded	12	56%		
Retained	10	44%		
Total Catch	22	100%		
Shortspine thornyhead				
Discarded	395	11%	1	9%
Retained	3,089	89%	10	91%
Total Catch	3,484	100%	11	100%
Mixed Thornyheads				
Discarded	7	1%		
Retained	687	99%		
Total Catch	694	100%		

Table 5(cont.). Discard rates for species taken from observed limited entry, fixed gear primary sablefish fishery by gear.

	Hook & Line		Pot	
	Pounds of species	Percent	Pounds of species	Percent
Sablefish				
Discarded	47,321	11%	76,535	30%
Retained	369,596	89%	181,708	70%
Total Catch	416,916	100%	258,243	100%
Pacific hake				
Discarded	111	85%		
Retained	20	15%		
Total Catch	131	100%		
Arrowtooth flounder				
Discarded	5,544	82%	64	100%
Retained	497	8%	0	0%
Total Catch	6,041	100%	64	100%
Petrale sole				
Discarded	7	21%		
Retained	25	79%		
Total Catch	32	100%		
Other flatfish				
Discarded	3	69%		
Retained	2	31%		
Total Catch	5	100%		
Other nearshore rockfish				
Discarded	41	7%		
Retained	531	93%		
Total Catch	572	100%		
Yellowtail Rockfish				
Discarded	190	27%		
Retained	517	73%		
Total Catch	707	100%		
Other shelf Rockfish				
Discarded	3,116	95%	3	100%
Retained	170	5%	0	0%
Total Catch	3,286	100%	3	100%
Other slope Rockfish				
Discarded	2,991	37%	78	2%
Retained	5,117	63%	3,600	98%
Total Catch	8,108	100%	3,678	100%
Other Roundfish				
Discarded	2,845	65%		
Retained	1,541	35%		
Total Catch	4,386	100%		
Pacific Halibut				
Discarded	43,608	88%	9,590	100%
Retained	5,921	12%	0	0%
Total Catch	49,529	100%	9,590	100%

Table 6. Ratio estimate and standard errors for the total bycatch of eight overfished species and sablefish per 100 pounds of retained sablefish in deep water for 2004 observed primary sablefish fishery sets. The ratios were calculated from 309 sets for hook and line gear and from 133 sets for pot gear. Deep water is defined as depth greater than 100fm north of 40° 10' N lat. and 150fm south of 40° 10' N. lat.

Species	Hook and Line		Pot	
	Lbs of species caught per 100 lb of retained sablefish		Lbs of species caught per 100 lb of retained sablefish	
	ratio	se	ratio	se
Bocaccio Rockfish	0.004	0.004	0.000	
Canary Rockfish	0.416	0.198	0.000	
Cowcod Rockfish	0.000		0.000	
Darkblotched Rockfish	0.041	0.012	0.045	0.019
Lingcod	0.577	0.130	0.963	0.266
Pacific Ocean Perch	0.008	0.003	0.004	0.003
Sablefish	112.808	9.810	142.120	19.027
Widow Rockfish	0.001	0.001	0.002	0.002
Yelloweye Rockfish	0.090	0.040	0.000	

Table 7. Ratio estimate and standard error for the discarded pounds of 26 selected species or species groups in deep water for 2004 for observed fixed-gear primary sablefish fishery. The ratios were calculated from 309 sets for hook and line gear and from 133 sets for pot gear. Deep water is defined as depth greater than 100fm north of 40° 10' N lat. and 150fm south of 40° 10' N. lat.

Species	Hook and Line											
	Percent of species discarded from total catch of species		Discarded lbs of species per unit effort		Discarded lbs of species per 100 lbs of retained sablefish		Percent of species discarded from total catch of species		Discarded lbs of species per unit effort		Discarded lbs of species per 100 lbs of retained sablefish	
	%	se	lb/hr	se	ratio	se	%	se	lb/hr	se	ratio	se
Arrowtooth flounder	91.779%	16.377%	1.920	0.295	1.501	0.217	100.000%	48.787%	0.0019	0.0007	0.0354	0.0130
Black Rockfish			0.000		0.000				0.0000		0.0000	
Bocaccio Rockfish	100.000%	100.000%	0.005	0.005	0.004	0.004			0.0000		0.0000	
California halibut			0.000		0.000				0.0000		0.0000	
Canary Rockfish	99.012%	62.758%	0.527	0.255	0.412	0.198			0.0000		0.0000	
Cowcod Rockfish			0.000		0.000				0.0000		0.0000	
Darkblotched Rockfish	53.094%	28.958%	0.028	0.013	0.022	0.010	19.322%	11.847%	0.0005	0.0002	0.0088	0.0045
Dover sole	31.127%	7.043%	0.075	0.016	0.059	0.012	28.753%	12.896%	0.0012	0.0005	0.0219	0.0088
Lingcod	55.934%	19.472%	0.413	0.119	0.323	0.092	25.667%	12.954%	0.0153	0.0070	0.2846	0.1310
Longspine thornyhead	55.533%	39.935%	0.004	0.003	0.003	0.002			0.0000		0.0000	
Other flatfish	68.750%	48.910%	0.001	0.001	0.001	0.001			0.0000		0.0000	
Other nearshore Rockfish	7.215%	6.954%	0.014	0.013	0.011	0.010			0.0000		0.0000	
Other shelf Rockfish	94.863%	55.346%	1.068	0.481	0.835	0.374	100.000%	75.717%	0.0001	0.0001	0.0018	0.0011
Other slope Rockfish	36.886%	11.584%	1.035	0.307	0.810	0.237	2.123%	0.979%	0.0023	0.0009	0.0431	0.0175
Pacific halibut	88.080%	19.194%	15.094	2.573	11.803	1.922	100.000%	27.754%	0.2844	0.0615	5.2873	1.1616
Pacific hake	84.911%	35.640%	0.039	0.012	0.030	0.009			0.0000		0.0000	
Pacific Ocean Perch	19.900%	14.758%	0.002	0.001	0.002	0.001	43.662%	37.680%	0.0001	0.0001	0.0017	0.0013
Petrale sole	22.959%	15.370%	0.002	0.001	0.002	0.001			0.0000		0.0000	
Sablefish	11.353%	1.376%	16.379	2.147	12.808	1.548	29.674%	4.260%	2.2697	0.3190	42.1958	6.1518
Salmon spp.			0.000		0.000				0.0000		0.0000	
Shortspine thornyhead	11.334%	2.284%	0.137	0.025	0.107	0.018	9.259%	9.259%	0.0000	0.0000	0.0006	0.0006
Other roundfish	65.058%	16.421%	0.985	0.194	0.770	0.146			0.0000		0.0000	
Mixed thornyheads	1.037%	0.823%	0.002	0.002	0.002	0.001			0.0000		0.0000	
Widow Rockfish	0.000%		0.000		0.000				0.0000		0.0000	
Yelloweye Rockfish	94.090%	56.932%	0.108	0.051	0.084	0.039			0.0000		0.0000	
Yellowtail Rockfish	26.886%	10.316%	0.066	0.022	0.052	0.017			0.0000		0.0000	



Table 8a. Comparison of sablefish discard and bycatch of overfished species among depth strata, using only sets that were designated as sable fish target sets from fixed-gear primary sablefish fishery by depth for 2004 for all gear types.

Species			
	0-150 fm	>150 fm	All depths
Number of sets observed	108	336	444
Sablefish			
Catch (lb)	200,088	475,072	675,159
Retained (lb)	174,247	377,057	551,303
Discard/Catch	12.9%	20.6%	18.3%
Bocaccio Rockfish			
Catch (lb)	13	0	13
lb of species caught per 100 lb of sablefish retained	0.007	0.000	0.002
Canary Rockfish			
Catch (lb)	1,459	136	1,660
lb of species caught per 100 lb of sablefish retained	0.837	0.036	0.289
Cowcod Rockfish			
Catch (lb)	0	0	0
lb of species caught per 100 lb of sablefish retained	0.000	0.000	0.000
Darkblotched Rockfish			
Catch (lb)	17	216	233
lb of species caught per 100 lb of sablefish retained	0.010	0.057	0.042
Lingcod			
Catch (lb)	1,601	2,360	3,961
lb of species caught per 100 lb of sablefish retained	0.919	0.626	0.719
Pacific Ocean Perch			
Catch (lb)	18	19	37
lb of species caught per 100 lb of sablefish retained	0.010	0.005	0.007
Widow Rockfish			
Catch (lb)	5	3	8
lb of species caught per 100 lb of sablefish retained	0.003	0.001	0.001
Yelloweye Rockfish			
Catch (lb)	258	73	331
lb of species caught per 100 lb of sablefish retained	0.148	0.019	0.060

Table 8b. Comparison of sablefish discard and bycatch of overfished species among depth strata, using only sets that were designated as sable fish target sets from fixed-gear primary sablefish fishery by depth and gear for 2004.

Species	Hook and Line			Pot
	0-150 fm	>150 fm	All depths	>150 fm
Number of sets observed	105	206	311	130
Sablefish				
Catch (lb)	199,956	216,960	416,916	258,111
Retained	174,185	195,409	369,595	250,465
Discard/Catch	12.9%	9.9%	11.4%	3.0%
Bocaccio Rockfish				
Catch (lb)	13	0	13	0
lb of species caught per 100 lb of sablefish retained	0.007	0.000	0.004	0.000
Canary Rockfish				
Catch (lb)	1,459	136	1,595	0
lb of species caught per 100 lb of sablefish retained	0.837	0.070	0.431	0.000
Cowcod Rockfish				
Catch (lb)	0	0	0	0
lb of species caught per 100 lb of sablefish retained	0.000	0.000	0.000	0.000
Darkblotched Rockfish				
Catch (lb)	17	133	150	82
lb of species caught per 100 lb of sablefish retained	0.010	0.068	0.041	0.033
Lingcod				
Catch (lb)	1,503	709	2,212	1,651
lb of species caught per 100 lb of sablefish retained	0.863	0.363	0.599	0.659
Pacific Ocean Perch				
Catch (lb)	18	12	30	7
lb of species caught per 100 lb of sablefish retained	0.010	0.006	0.008	0.003
Widow Rockfish				
Catch (lb)	5	0	5	3
lb of species caught per 100 lb of sablefish retained	0.003	0.000	0.001	0.001
Yelloweye Rockfish				
Catch (lb)	258	73	331	0
lb of species caught per 100 lb of sablefish retained	0.148	0.037	0.089	0.000